



CYTOLOGICAL EVALUATION OF NECK LYMPH NODES FOR METASTATIC DISEASE

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ABSTRACT

Background: Fine needle aspiration cytology (FNAC) is a simple, rapid and cost effective procedure with minimal complications for evaluating enlarged neck nodes, but also gives clue. Neck lymph nodes are a common site of metastasis for various carcinomas, usually from the upper aerodigestive tract and salivary gland or carcinoma of unknown primary.

Objectives: To study different cytomorphological patterns of metastatic neck nodes. To evaluate the diagnostic utility of FNAC in diagnosis of metastatic lesions of lymph node.

Methods: It is a one year prospective study comprised of all aspirates 139 lymphnodes of 968 patients. FNACs conducted in the Department of Pathology, Vydehi Institute of Medical Sciences, Bangalore, between January 2019 to December 2019. A total of 70 out of 139 peripheral neck nodes in patients diagnosed with metastatic neck lymph node on FNAC were included in the study.

Results: Out of 70 cases included in our study, metastasis to the neck lymph nodes were most common in the age group 51 to 60 years (38.6%) followed by 61 to 70 years (28.6%). Male preponderance was noted with male to female ratio of 1.7:1. On cytological examination, squamous cell carcinoma was found to be the most common tumor metastasizing to the neck nodes, accounting for 37 (52.9%) cases followed by each 10 (14.3%) cases each of undifferentiated carcinoma and thyroid carcinoma, 9 (12.9%) cases of adenocarcinoma, 3 (4.3%) cases of parotid gland carcinoma and 1 (1.4%) case of germ cell tumor of testis.

Conclusion: FNAC is an early and reliable tool for the diagnosis of metastatic neck nodes. Any enlarged neck node should be investigated to rule out metastasis.

KEYWORDS : Metastasis, Neck Lymph nodes, FNAC

INTRODUCTION

Neck lymph nodes are a common site of metastasis for various carcinomas, often show diffuse involvement therefore involved node will invariably result in diagnostic cells in a background of lymphoid cells. Aspirated material alone will show a conclusive diagnosis in majority of patient with metastatic tumours especially older than 50 years of age. The cytological presentation of different tumour is relatively independent of metastatic site which helps in search of site of primary tumour. Fine needle aspiration cytology (FNAC) is a reliable, simple, rapid and cost effective procedure with minimal complications for evaluating enlarged neck nodes. [4,5]

The use of FNAC for the diagnosis of metastatic tumour as well as to know the primary organ of origin and recurrent lesions of malignancy sometimes. [6]

In present study will addressed metastatic neck nodes usually from upper aerodigestive tract thyroid ,salivary gland or carcinoma of unknown primary.[1,2] Metastasis to neck lymph nodes can also occur from gastrointestinal tract, lung.[3]Other primary sites below the clavicle, which may appear in the neck, are cervix, ovary and some time even from germ cell tumour.

AIMS AND OBJECTIVES

1. To study different cytomorphological patterns of metastatic neck nodes.
2. To Evaluate The Diagnostic Utility Of Fnac In Diagnosis Of Metastatic Deposits Of Lymph Node.

MATERIALS AND METHODS

It is a one year prospective study conducted in the Department of Pathology, Vydehi Institute of Medical Sciences, Bangalore, Karnataka, between January 2019 to December 2019. All hematolymphoid neoplasm are excluded. The study made up a total of 139 aspirates from 968 patients. A total of 70 (50.35%) patients diagnosed with metastatic neck lymphadenopathy on FNAC were included in the study out of 139 peripheral neck

nodes. Each aspirate considered as one case. The adequacy of material was recorded by quick methylene blue stain studied under light microscope. The other nodes were reported as 35 cases of reactive lymphadenitis (25.18%), 14 cases of granulomatous lymphadenitis (10.07%) 18 cases are non diagnostic (13.04%) and 2 were necrotic lymph node (1.4%). Adult cases were 136 (99.66%) recorded more than the paediatric cases 3 (0.33 %) FNAC was carried out using a 22 gauge needle attached to a 10 ml syringe. The aspirate was smeared on an average of 4 to 5 glass slides. Air dried smears were stained with MGG stain and wet fixed smears were stained using Papanicolaou stain and H&E stain. Prepared slides were examined under a light microscope.

RESULTS

During the period of 1 year a total of 968 FNAC from all the sites performed in the institute, of them 139 aspirates from head and neck lymph nodes. Cytology results from 70 (50.35%) aspirates out of 139 were metastasis to the neck lymph nodes. Other 69 aspirates from the neck nodes non metastatic reported as reactive lymphadenitis, granulomatous lymphadenitis, necrotic nodes and inadequate for opinion. Metastasis to the neck lymph nodes were most common in the age group 51 to 60 years (38.6%) followed by 61 to 70 years (28.6%). Male preponderance was noted with male to female ratio of 1.7:1.

On cytological examination, squamous cell carcinoma was found to be the most common tumour metastasizing to the neck nodes, accounting for 37 (52.9%) cases followed by each 10 (14.3%) cases each of undifferentiated carcinoma and thyroid carcinoma, 9 (12.9%) cases of adenocarcinoma, 3 (4.3%) cases of parotid gland carcinoma and 1 (1.4%) case of germ cell tumour of testis.

The most common primary site for squamous cell carcinoma was found to be tongue (8 cases) followed by vocal cord (5 cases), lung (4 cases), larynx (2 cases), supraglottis (2 cases),

buccal mucosa (2 cases), oesophagus (2 cases), cervix (2 cases), nasopharynx (1 case), tonsil (1 case) and lip (1 case). 7 cases were of unknown primary site.

In addition to metastatic squamous cell carcinoma ,metastasis of adenocarcinoma was observed in 9 cases with breast being the commonest primary site (4 cases) followed by stomach (2 cases), gall bladder (2 cases) and rectum (1 case) In the present study 10 cases given as poorly differentiated/undifferentiated deposits in nodes having few of them were known primary origin from nasopharynx , gallbladder, stomach ,lung and aero digestive tract 5 out of 10 with the history of unknown origin and asked to look for primary.

The most common thyroid carcinoma metastasizing to the neck nodes was papillary carcinoma (9 cases) followed by follicular carcinoma (1 case) reported definit or suspicious metastasis from a known primary or occult lesion. Out of 3 cases of parotid gland carcinoma metastasizing to the neck nodes, 2 cases were of mucoepidermoid carcinoma and 1 case of adenoid cystic carcinoma suspected spread from primary salivary gland tumour.

Table 1: Distribution Of Lesions By Age And Sex

AGE GROUP (in years)	SEX		TOTAL	
	MALE	FEMALE	NUMBER	PERCENTAGE
<30	00	00	00	0%
31-40	05	04	09	12.9%
41-50	05	05	10	14.2%
51-60	17	10	27	38.6%
61-70	15	05	20	28.6%
>70	02	02	04	5.7%
TOTAL	44	26	70	100%

Table 2: Distribution Of Various Types Of Metastatic Lesions

METASTATIC LESION OF CASES	NUMBER	PERCENTAGE
Squamous cell carcinoma	37	52.9%
Undifferentiated carcinoma	10	14.3%
Thyroid carcinoma	10	14.3%
Adenocarcinoma	09	12.8%
Parotid gland carcinoma	03	04.3%
Germ cell tumor	01	1.4%
Total	70	100%

DISCUSSION

Lymphadenopathy is one of the earliest clinical presentations of metastatic malignancy. Around more than 90% of lymph node metastases are detected by initial aspiration [7, 10] . Therefore, FNA is of considerable importance in diagnosis of metastatic neck nodes, for typing of tumor and also guides the surgeon to find the primary lesion. Presently technology was improved cell block preparation from FNA material and it is increasingly indicated in most of cytology to know the accuracy of diagnosis by using immunocytochemistry or flow cytometry in lymphomas , as also gold standard method of diagnosis for extended surgery and radio chemotherapy[11]. In the present study, the maximum number cases, out of 70 showing commonest metastatic deposits of squamous cell carcinoma to the neck nodes and were belonged to the age group 51 to 60 years accounting for 37 cases (52.9%).

Most of the aspirates tend to be more mature with hyperchromatic irregular nuclei and cells with abundant dense opaque cytoplasm arranged in sheets (Fig.1) with occasional pearl and giant cell reaction to the keratin in a back ground of few cyst macrophages and polymorphous lymphoid cells.

This finding was similar to the studies conducted by Shah GF et al[6], Kirti M et al,[8] Alam K et al [9](Table number 3 and 4) .

Table 3: Comparison Of Age Group In Metastatic Lymph Lesions With Other Studies

AGE GROUP (in years)	PRESENT STUDY No. of cases (%)	Kirti M et al [8] No. of cases (%)
<30	00(0%)	85.(7%)
31-40	09(12%)	16(11.4%)
41-50	10(14.2%)	32(22.9%)
51-60	27(38.6%)	42(30%)
61-70	20(28.6%)	42(30%)
>70	04(5.7%)	
TOTAL	70(100%)	140(100%)

Table 4: Comparison Of Distribution Of Various Types Of Metastatic Lesions With Other Studies

METASTATIC LESION	PRESENT STUDY	Shah GF et al [6]	Kirti M et al [8]	Alam K et al [9]
Squamous cell carcinoma -	37 (52.9%)	47 (58.8%)	112 (80%)	150 (67.87%)
Undifferentiated carcinoma	10 (14.3%)	3 (3.8%)	5 (3.6%)	09 (4.04%)
Thyroid carcinoma	10 (14.3%)	-	-	04 (1.8%)
Adenocarcinoma	09 (12.8%)	24 (30%)	21 (15%)	45 (20.4%)
Parotid gland carcinoma	03 (4.3%)	-	-	03 (1.35%)
Germ cell tumor	01 (1.4%)	-	2 (1.4%)	
Small cell carcinoma	-	2 (2.5%)	-	04 (1.8%)
Round cell tumor	-	1 (1.2%)	-	03 (1.4%)
Sarcoma	-	1(1.2%)	-	-
Malignant melanoma	-	2(2.5%)	-	02(0.9%)
TCC	-	-	-	01 (0.45%)
Total	70 (100%)	80 (100%)	140 (100%)	221 (100%)

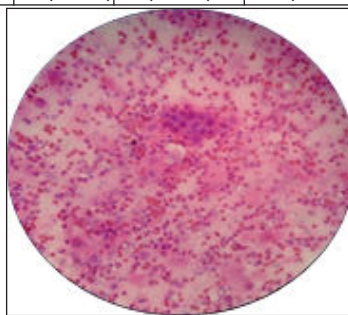


Figure 1: FNA Smear Show Metastatic Squamous Cell Carcinoma In Cervical Node (H&Ex400)

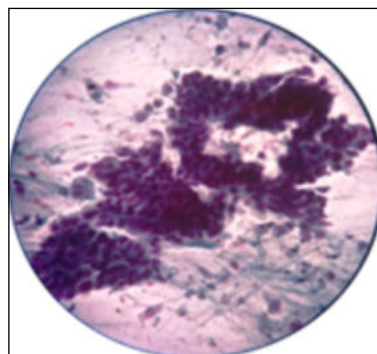


Figure 2: FNA Smear Show Metastatic Adenocarcinoma Showing Cells In Glandular Pattern And Clusters (H&Ex400)

